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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/810,202

03/26/2004

Ho Yong Kang

2013P159

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7590

02/02/2006

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EXAMINER

VAN ROY, TOD THOMAS

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/810,202	Applicant(s) KANG ET AL.	
	Examiner Tod T. Van Roy	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/05/2005</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities:

Page 4, lines 12-14, describes converting a power P0 into a maximum voltage level, while P0 is a minimum voltage as shown in Figure 2 when compared with P1.

Page 5, lines 3-11, describe how a change in temperature will relate to reference values for the driving currents. As described, the temperature will increase, P0 will decrease, and the top holder will detect a voltage greater than the REF1 voltage. This does not seem to make sense, as the increase in temperature would decrease power output, reducing the current of the photodiode, and subsequently reducing the

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voltage detected by the top holder, which would make the detected voltage less than, not greater than, REF1.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano (US 2002/0009109).

With respect to claims 1 and 7, Asano teaches an apparatus for compensating for characteristics of a laser diode so that the laser diode outputs an optical power at a constant level, also functioning as a transmitter with data inputs, the apparatus comprising: an optical output detector which detects an optical power output from the laser diode (fig.2 #2) and converts the optical power into a voltage (fig.3 #33, 38), a bias current controller which detects a minimum level of the voltage and outputs a first

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control value corresponding to a difference between the minimum level and a first reference voltage (fig.2 #5), a modulation current controller which detects a maximum level of the voltage and outputs a second control value corresponding to a difference between the maximum level and a second reference voltage (fig.2 #4), and a laser diode driver that outputs a drive current to the laser diode according to the first and second control values (fig.2 comprised of #'s 8 and 9). Asano does not teach using the peak value to control the bias current or the bottom value to control the modulation current. It would have been obvious to one of ordinary skill in the art at the time of the invention to simply switch the outputs of the peak and bottom error circuits of Asano, as this would basically allow for the same degree of control to be present over the controlling currents.

With respect to claims 2 and 8, Asano teaches the laser apparatus as outlined in the rejection to claims 1 and 7, and further teaches an optical/electrical signal converter which converts the optical power output from the laser diode into a current (fig.2 #2); a trans-impedance amplifier which inverts an output of the optical/electric signal converter and a resistor which is in parallel connected to the trans-impedance amplifier and converts the current into a voltage (fig.3 #33 and #38 in a trans-impedance amplifier configuration, wherein an additional resistor added in parallel would inherently be present as this additional resistor could be combined with the resistor from the trans-impedance amplifier and be represented by a single equivalent resistance).

With respect to claims 3-6 and 9-12, Asano teaches the laser apparatus as outlined in the rejection to claims 1 and 7, and further teaches a top holder which

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detects the maximum level from voltage levels output from the output detector (fig.2 #41); and an automatic power controller which compares an output of the top holder with the first reference voltage ( $V_{peak}$ ) and outputs a control value corresponding to a difference between the output and the first reference voltage to the laser diode driver ([0008]); a bottom holder which detects the minimum level from voltage levels output from the optical detector (fig.2 #51); and an automatic modulation controller which compares an output of the bottom holder with the second reference voltage ( $V_{bottom}$ ) and outputs a difference between the output and the second reference voltage to the laser diode driver ([0009]).

### ***Conclusion***

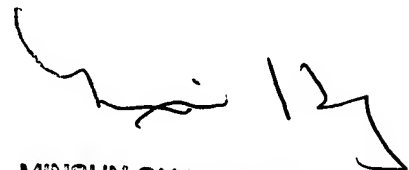
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR



MINSUN OH HARVEY  
PRIMARY EXAMINER